5(2)

AUTHORS: Edel'man, I. I., Zabora, L. S., Khizhnyak, N. D. SOV/32-25-2-16/78

TITLE: The Accelerated Determination of Phosphorus in Coal and Coke (Uskorennoye opredeleniye fosfora v ugle i kokse)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 2, pp 159-160 (USSR)

ABSTRACT: It was tried to replace the time-consuming fusion of the sample necessary in the method suggested by M. Ye. Neymark and I. Ye. Kagan (Ref 1) and introduced by the GOST 1932-54 by a simpler method. For this purpose the method described by Zdenek (Ref 2) was examined, but the final determination was not carried out polarographically but photocolorimetrically with molybdenum blue. It was shown that the results obtained with this method of acid fusion are too low, i.e. it seems likely that all of the phosphorus is not extracted. This means that the method is unsatisfactory. Investigations of a second variant, namely the incineration of the sample in the presence of air followed by a digestion in powerful acids furnished satisfactory results (Tables 1,2). The reproducibility is equally good, and the variations of parallel determinations do not exceed the permissible limits. The analysis duration

Card 1/2

The Accelerated Determination of Phosphorus in Coal and Coke SOV/32-25-2-16/78

is 1.5 hours, as compared to 4-6 hours in the case of the standard method. Furthermore, it is no longer necessary to use the "Eshka" mixture which must be used in the standard method. There are 2 tables and 2 references, 1 of which is Soviet.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy uglekhimicheskiy institut (Ukrainian Scientific Research Institute of Coal Chemistry)

Card 2/2

KHIZHNYAK, O.I.

Case of severe anaphylactic shock following the administration of bicillin-3. Klin.med. 40 no.10:128 O '62. (MIRA 15:12)

1. Iz Permskoy gorodskoy bol'nitsy No.7.
(BICILLIN--TOXICOLOGY) (ANAPHYLAXIS)

YURKIN, S.; KHIZHNYAK, P.; CHENKIN, A.; KUZNETSOVA, Ye.; SHAKHRAY, L.;
KALASHNIKOV, K., kand. sel'skokhoz. nauk (Pushkin)

Meetings, conference and seminars. Zashch. rast. ot vred. i
bol. 10 no.7:55-58 '65. (MIRA 18:10)

1. Uchenyy sekretar' Nauchno-tekhnicheskogo soveta Ministerstva sel'skogo khozyaystva SSSR (for Yurkin). 2. Zamestitel' nachal'nika Upravleniya zashchity rasteniy Ministerstva sel'skogo khozyaystva RSFSR (for Chenkin). 3. Zaveduyushchaya sektorom signalizatsii i prognozov po RSFSR Upravleniya zashchity rasteniy Ministerstva sel'skogo khozyaystva RSFSR (for Kuznetsova).

KHIZHNYAK, P.

[redacted]

Framed coated reedwork panels. Sel'.stroi. 14 no.6:9-10
Je '59.
(MIRA 12:9)

1. Rukovoditel' laboratorii Astrakhanskogo instituta "Stroykamysh".
(Astrakhan Province--Reed (Botany))
(Walls)

LIPSITS, D.V., kand.biolog.nauk; KHIZHNYAK, P.A., kand.sel'skokhoz.nauk;
SAZONIK, Kh.V.

Effect of gamma radiation on potato wart. Zashch.rast.ot vred.i bol. 4 no.6:47-48 N-D '59. (MIRA 15:11)

1. Vsesoyuznaya stantsiya po raku kartofelya Vsesoyuznogo instituta zashchity rasteniy, g. Chernovtsy. 2. Zaveduyushchiy otdelom toksikologii Vsesoyuznoy stantsii po raku kartofelya Vsesoyuznogo instituta zashchity rasteniy, g. Chernovtsy (for Sazonik).
(Plants, Effect of gamma rays on) (Potato wart)

KHIZHNYAK, P.A.

In the Ministry of Agriculture of the U.S.S.R. Zashch. rast. ot vred. i bol. 9 no.7:57 '64. (MIRA 18:2)

KHIZHNYAK, P.A., kand.sel'skokhoz.nauk

Conference on root rot. Zashch. rast. ot vred. i bol. 8 no.5: 58-59 My '63. (MIRA 16:9)
(Caucasus, Northern—Root rot)
(Caucasus, Northern—Grain—Diseases and pests)

KHIZHNYAK, P.A., kand. sel'skokhoz. nauk

Problem of potato wart. Zashch. rast. ot vred. i bol. 9 no.8:54-55 '64. (MIRA 17:12)

KHIZHNYAK, P.A., kand.sel'skokhoz.nauk ; YAKOVLEVA, V.I.

Agressive strains of the pathogen of potato wart.
Zashch. rast. ot vred. i bol. 7 no.7:51 Jl '62.
(MIRA 15:11)

1. Vsesoyuznaya nauchno-issledovatel'skaya stantsiya
po raku kartofelya, g. Chernovtsy.
(Potato wart)

KHIZHNYAK, P.A.; PASHKAR', S.I.; YAKOVLEVA, N.N.

Regenerative capacity of potatoes. Zashch.rast.ot vred.i bol. 5 no.7:47-48 Jl '60. (MIRA 16:1)

1. Vsesoyuznaya stantsiya po raku kartofelya Vsesoyuznogo instituta zashchity rasteniy, g. Chernovtsy.
(Potato beetle) (Regeneration (Botany))

KHIZHNYAK, P.A.

Potato varieties resistant to wart. Zashch.rast.ot vred.i bol. 4 no.4:47 Jl-Ag '59. (MIRA 16:5)

(Potato wart) (Potatoes--Varieties)

KHIZHNYAK, P.A.; SAZONIK, Kh. V.

Proposals by the All-Union Station for Potato Wart. Zashch. rast. ot vred. i bol. 6 no.10:19 O '61. (MIRA 16:6)

1. Direktor Vsesoyuznoy stantsii po raku kartofelya, Chernovtsy (for Khizhnyak). 2. Zaveduyushchiy otdelom toksikologii Vsesoyuznoy stantsii po raku kartofelya, Chernovtsy (for Sazonik).

(Potato wart)

KHIZHNYAK, P.A., kand.sel'skokhoz.nauk

Symposium on cotton wilt. Zashch. rast. ot vred. i bol. 8 no.12:
52-53 D '63.
(MIRA 17:3)

1. Ministerstvo sel'skogo khozyaystva SSSR.

KHIZHNYAK, P.A.; NOVINSKIY, Yu.S., agronom; SHURKUS, I.; GARGAUN, G.;
FILITSIN, V.; GARDIMAN, V.

Information and brief news. Zashch. rast. ot vred. i bol.
9 no.5:57-60 '64. (MIRA 17:6)

1. Gosudarstvennaya inspektsiya po karantinu i zashchite rasteniy Ministerstva sel'skogo khozyaystva SSSR (for Novinskiy).

KHIZHNYAK, Pavel Denisovich; BAKHANOVICH, Aleksandr Ivanovich;
CHERVOVA, M.S., red.

[Mechanization and automation in Leningrad enterprises; from work experience] Mekhanizatsiia i avtomatizatsiia na leningradskikh predpriiatiiakh; iz opyta raboty. Leningrad, Lenizdat, 1964. 170 p. (MIRA 18:4)

KHIZHNYAK, Pavel Denisovich; YEMEL'YANOVA, Ye.V., red.; SMIRNOV, P.S.
tekhn.red.

[Mechanization and automation are main objectives in technical development] Mekhanizatsiia i avtomatizatsiia - glavnoe v tekhnicheskom progresse. Leningrad, Lenizdat, 1959. 30 p. (MIRA 12:12)

1. Nachal'nik tekhnicheskogo upravleniya Leningradskogo sovnarkhoza (for Khizhnyak).
(Automation) (Technological innovations)

KHIZHNYAK, P.D., glavnyy red.; GLAZOV, G.A., zam.glavnogo red.; BLYUMBERG, V.A., red.; VASIL'KOV, B.A., red.; GLUSHKOV, A.T., red.; ZHOLOBOV, V.V., red.; KAMNEV, P.V., red.; KANTIYEV, N.M., red.; KISELEV, M.I., red.; KOSTYGOV, I.N., red.; MOISEYEV, A.A., red.; NOVIKOV, A.P., red.; SIMIN, S.A., red.; CHERNYSHEV, P.S., red.; SHAGURIN, K.A., red.; SHUB, I.Ye., red.; DEMENT'YEVA, I.K., red.; SEMENOVA, A.V., tekhn.red.

[Experience of mechanical engineers; technical information publication] Opyt mashinostroitelei; informatsionno-tekhnicheskii sbornik. Leningrad, Sovet nar.khoz.Leningr.ekon.administrativnogo raiona. TSentr.biuro tekhn.informatsii, 1960. 88 p. (MIRA 13:11)

(Mechanical engineering)

KHIZHNYAK, P.D.

PHASE I BOOK EXPLOITATION SOV/4754

Vsesoyuznoye soveshchaniye po gruppovym tekhnologicheskim protsessam v mashinostroyenii i priborostroyenii. 1st, Leningrad, 1959

Gruppovaya tekhnologiya v mashinostroyenii i priborostroyenii (Group-Processing Methods in the Machine and Instrument Industries) Moscow, Mashgiz, 1960. 378 p. Errata slip inserted. 7,000 copies printed.

Ed. (Title page): S.P. Mitrofanov, Lenin Prize Winner, Candidate of Technical Sciences; Eds.: A.B. Azarov, Candidate of Technical Sciences, S.G. Gutner, Engineer, P.V. Lazarev, Candidate of Technical Sciences, A.K. Kutay, Candidate of Technical Sciences, R.A. Reznikov, Engineer, and G.N. Shalgin, Candidate of Economic Sciences; Managing Ed. for Literature on Machine-Building Technology (Leningrad Department, Mashgiz): Ye.P. Naumov, Engineer; Ed. of Publishing House: N.Z. Simonovskiy; Tech. Ed.: O.V. Speranskaya.

PURPOSE: This collection of articles is intended for technical personnel in machine plants, designing organizations, and scientific-research institutes. It may also be useful to skilled workers.

COVERAGE: The collection consists of papers presented at the [illegible] Conference on Group Processing in the Machine and Instrument Industries, held November 24-28, 1959 in Leningrad. The conference was called by scientific and technical societies of the machine and instrument industry, GNTK RSFSR, and Lensovnarkhoz. The articles are based on the experience of industry in introducing the grouping principle in processing. They discuss basic trends in development, and group machining as the basis of mechanized continuous production. The designing of automatic production lines, construction of accessories, and modernization and specialization of equipment are discussed. Problems dealing with the introduction of group-machining methods into processing on various machine tools and into production of blanks (casting, pressworking, pressing of plastics) are considered. Planning, standardization, and methods for calculating the economic effectiveness of group processing are also treated. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

Bolotin, A.I. [Moscow]. Multiproduct (Group) Setup of Special and Universal Machine Tools (From the Work Experience of the "Krasnyy Proletariy" Plant imeni Yefremov) 201

Gay, L.B. [Moscow]. Multiproduct Production Lines (From the Work Experience of the Orgstankinprom Institute) 224

Fedorov, G.A. [Voronezh]. Group [Processing] Lines and Closed Sectors in Small-Lot Production 229

Sobolev, Ye.P. [L'vov]. Group Setups and Multiproduct Lines for Part Machining in the L'vovskiy zavod avtopogruzchikov (L'vov Loading-Truck Plant) 236

Mazo, B.Ya. [Leningrad]. Experience in Application of the Group Method in Bench-Assembly Operations 246

Thalin, I.M. [Leningrad]. Introduction of Continuous Production Methods and Mechanization of Assembly Operations in Electric-Instrument Manufacturing, Based on Group Processing 260

PART III. GENERAL PROBLEMS IN GROUP PROCESSING

Khizhnyak, P.D. [Leningrad]. The Experience of Introducing Group Processing in the Establishments of the Leningrad Sovnarkhoz 269

Rommeri, I.N. [Gor'kiy]. High-Efficiency Processing 278

Ivanov, Ye.K. [Leningrad]. The Results of Several Years' Operation of a Plant Employing Group Machining 280

Brusnikov, N.A. [Leningrad]. The Experience of Introducing Group-Processing Methods in an Optical-Mechanical Plant 286

Mirmovich, G.M. [Sverdlovsk]. The Experience of Introducing Group-Processing Under Conditions of Piece and Small-Lot Production in the Uralmashzavod 296

Malent'yev, E.P. [Kuybyshev]. Special Features in the Development of Manufacturing Processes With the Introduction of Group Machining of Parts 318

②

S/123/61/000/014/012/045
A004/A101

AUTHOR: Khizhnyak, P. D.

TITLE: The practice of introducing the gang technology in plants of the Leningrad Sovnarkhoz

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 14, 1961, 1, abstract 14B3 (V sb. "Gruppovaya tekhnol. v mashinostr. i priborostr." Moscow - Leningrad, Mashgiz, 1960, 269-277)

TEXT: The author describes the dynamics of introducing the gang technology in different trade administrations, the number of mastered machine parts, number of equipment units, distribution of parts according to the kind of working and the measures taken by the Lensovnarkhoz to introduce this method in the plants on a big scale. The trade institutes of LSNKh have developed the fundamental guiding methodical materials: unified forms of technological documentation, component classifiers, gang setting, work rating instructions, calculations of the economic efficiency, etc. Examples are cited of the savings attained at individual plants and of the increase in productivity. The author reports on the development of a system of program control and conveyer lines based on the gang

Card 1/2

The practice of introducing ...

S/123/61/000/014/012/045
A004/A101

technology. In order to utilize the experience in a better way, 12 plants have been marked as basic ones. Seminars are being held in order to spread experience and prepare the personnel. There are 5 figures.

I. Briskman

[Abstracter's note: Complete translation]

Card 2/2

KHIZHNYAK, P.D.

Introduction of multiple machining processes in enterprises of the Leningrad Economic Council. Mashinostroitel' no.1:9-10 Ja '64.
(MIRA 17:2)

1. Nachal'nik tekhnicheskogo upravleniya Soveta narodnogo khozyaystva Leningradskogo ekonomicheskogo rayona.

KHIZHNYAK, P.D.

Mechanization and automation of production processes in industrial enterprises of the Leningrad Economic Council. Mekh. i avtom.proizv. 15 no.8:1-7 Ag '61. (MIRA 14:9)

1. Nachal'nik tekhnicheskogo upravleniya Leningradskogo Soveta narodnogo khozyaystva.
(Leningrad Province—Industry—Technological innovations)
(Automation)

KHIZHNYAK, P.Ye., inzh.

Widening the range of operation of a combustion control system for RG-56 marine boiler plants. Sudostroenie 26 no.3(209):58-59 Mr '60. (MIRA 14.11)

(Boilers, Marine)
(Automatic control)

L 32885-65 EWP(w)/EWT(m)/EWA(d)/EWP(t)/T/EWP(b) JW/JD

ACCESSION NR: AP5005548 S/0147/65/000/001/0144/0148

AUTHOR: Khizhnyak, P. Ye. 17 B

TITLE: On the problem of determining the components of contact thermal resistance

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 1, 1965, 144-148

TOPIC TAGS: thermal conductivity, temperature distribution, steel/ 30KhGSA steel

ABSTRACT: A simplified method is outlined for measuring the contact thermal conductivity for component materials without using vacuum chambers. A set of four equations

$$R'_c = \frac{R_c \cdot \lambda_c}{\lambda'_c}, \qquad \frac{1}{R_k} = \frac{1}{R_c} + \frac{1}{R_\phi},$$

$$R'_\phi = \frac{R_\phi \cdot \lambda_\phi}{\lambda'_\phi}, \qquad \frac{1}{R'_k} = \frac{\lambda'_c}{R_c \cdot \lambda_c} + \frac{\lambda'_\phi}{R_\phi \cdot \lambda_\phi},$$

is derived relating the various conductivities of the contact surfaces. Here R_k, R'_k are the total thermal resistances at temperatures T and T'; R_c, R'_c are the

Card 1/2

L 32885-65

ACCESSION NR: AP5005548 0

thermal resistances of the material between the contact surfaces, R_ϕ, R'_ϕ are the thermal resistances of the actual contact, corresponding to temperatures T and T', and the λ's are the corresponding thermal conductivity coefficients. These results are checked experimentally for 30KhGSA steel surfaces and are compared to the calculated results. The agreement is satisfactory. The results also show that at low heat loads the decrease in the mean thickness of the inter-contact layer is very sharp, but for higher heat loads it flattens off to an almost constant value. This method of estimating the contact thermal resistance for component materials is shown to be practical. Orig. art. has: 9 equations and 3 figures.

value. This method of estimating the contact thermal resistance for component materials is shown to be practical. Orig. art. has: 9 equations and 3 figures.

ASSOCIATION: none

SUBMITTED: 27Apr64 ENCL: 00 SUB CODE: ME

NO REF SOV: 004 OTHER: 001

Card 2/2

1. KNIZHNYAK, S. P., Engs.; CHULKOV, Ye., I.

2. USSR (600)

4. Steam Boilers

7. Tenon screens in operation. Elek. sta., 23, No. 10, 1952

9. **Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.**

VAYNER, M.A., inzhener; KHIZHNYAK, S.P., inzhener.

Increasing the efficiency of boiler units burning anthracite dust. Elek. sta. 24 no.4:53-55 Ap '53. (MLRA 6:5)
(Steam boilers)

KHIZHNYAK, V. A.

USSR/Cultivated Plants - Grains. M.

Abs Jour : Ref Zhur - Biol., No 10, 1958, 44024

Author : Khizhnyak, V.A.

Inst : Krasnodarsk Scientific Research Institute for Agriculture

Title : On the Winter Wheat Variety for the Northern Zone of Krasnodarskiy Kray.

Orig Pub : Byul. nauchno-tekhn. inform. Krasnodarsk n.-i. in-ta s. kh., 1957, vyp. 1, 28-30

Abstract : For the conditions of the northern zone of the Krasnodarskir Kray the prospective variety of winter wheat is Hubrid 1126. It is distinguished by great winter resistance, resistanceato drought and rust, and it has good bread baking qualities. In the 4-year trial on the Leningrad experimental field of the institute and the 2-year production trials on the fields of the collective farms

Card 1/2

KHIZHNYAK, V.A., kand.sel'skokhoz.nauk

Strengthening the feed supply in Krasnodar Territory.
Zemledelie 7 no.10:58-66 O '59. (MIRA 13:1)

1. Krasnodarskiy nauchno-issledovatel'skiy institut sel'skogo khozyaystva.
(Krasnodar Territory--Feeds)

L 29342-66 EWP(j)/EWT(m)/T IJP(c) RM

ACC NR: AP6018595 SOURCE CODE: UR/0379/66/002/002/0240/0246

AUTHOR: Pokhodenko, V. D.; Khizhnyy, V. A.; Yershov, V. V.; Nikoforov, G. A. 42

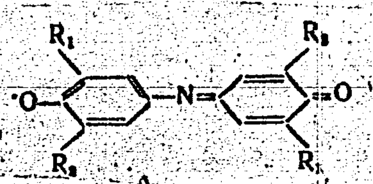
ORG: Institute of Physical Chemistry im. L. V. Pisarzhevskiy, AN UkrSSR, Kiev (Institut fizicheskoy khimii AN UkrSSR) B

TITLE: EPR spectra and behavior of substituted indophenoxy radicals 1

SOURCE: Teoreticheskaya i eksperimental'naya khimiya, v. 2, no. 2, 1966, 240-246

TOPIC TAGS: hindered phenol, oxidation inhibitor, electron paramagnetic resonance

ABSTRACT: A study has been made of the EPR spectra and the structure of substituted (with CH_3, iso-C_3H_7, tert-C_4H_9, tert-C_5H_{11}, cyclohexyl) indophenoxy radicals



formed on oxidation of the indophenols. It is noted that hindered phenols are widely used as oxidation inhibitors for polymers. 15 It was found that the impaired electron

Card 1/2

L 29342-66

ACC NR: AP6018595

0

reacts with the nitrogen and with the ortho and meta hydrogens of both benzene rings. The reaction of indophenols with benzoyl peroxide to form indophenoxy radicals was of the first order with respect to indophenol. The annihilation of indophenoxy radicals in benzene was a second-order reaction with respect to the radical. From the values of rate constants of the annihilation of radicals having different substituents, data were obtained on their stability. This stability dropped sharply on going from radicals with o-tert-alkyl substituents to radicals with less-branched groups. Orig. art. has: 7 figures and 2 tables. [SM]

SUB CODE: 07, 20 SUBM DATE: 19Jun65/ ORIG REF: 006/ OTH REF: 013/. ATD PRESS: 5109

Card 2/2 CC

KLIMENKO, V.L.; TSYRKIN, Ye.B.; KHIZHNYAK, V.F.; MASLYANSKIY, G.N.; BURSIAN, N.R.

Efficiency of the process of the isomerization of gasoline fractions. Khim. i tekh. topl. i masel 10 no.7:50-53 Jl '65. (MIRA 18:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov.

1. KHIZHNYAKOV, A. V.

2. USSR (600)

4. Petroleum - Shugurovo District

7. Survey of bacteria in the area of the Shugurovo petroleum depostis (Tatar A. S. S. R.) and in the uplifted region of Altunino and Oikino (Kuybyshev Province). (Abstract.) Izv. Glav. upr. geol. fon., no. 3, 1947.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

1. KHIZHNYAKOV, A. V.

2. USSR (600)

4. Petroleum - Shentala District

7. Survey of bacteria in the Shentala District of the Kuybyshev Province. (Abstract) Izv. Glav. upr. geol. fon., no. 3, 1947.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

KHIZHNYAKOV, A.V.

New traces of vertebrates in lower Micene deposits of the Carpathian piedmont. Geol.sbor.[Lvov] no.1:177-179 '54.
(MIRA 10:1)

1.Ukrainskiy Vsesoyuznyy nauchno-issledovatel'skiy geologo-razvedochnyy neftyanoy institut, L'vov.
(Carpathian Mountain region--Vertebrates, Fossil)

KHIZHNYAKOV, A.V.

[redacted]

Geological history of the southwestern borderlands of the Russian Platform in the Paleozoic. Trudy Akad. neft. prom. no.2:94-108 '55. (MIRA 8:5)

(Russian Platform--Geology, Stratigraphic)

KHIZHNYAKOV, A.V.

Devonian deposits in the southwestern edge of the Russian Platform. Geol. nefti 1 no.9:21-31 S '57. (MIRA 10:9)

1. Ukrainskiy Vsesoyuznyy nauchno-issledovatel'skiy geologo-razvedochnyy neftyanoy institut.
(Russian Platform--Geology, Stratigraphic)

KHIZHNYAKOV, A.V.

Facies and thicknesses of middle Paleozoic sediments in the Volyn-Podolian part of the Russian Platform in connection with its tectonic structure. Geol. sbor. [Lvov] no.5/6:190-203 '58. (MIRA 12:10)

1.Ukrainskoy otdeleniye Vsesoyuznogo nauchno-issledovatel'skogo geologo-razvedochnogo neftyanogo institut, L'vov.
(Volyn-Podolian region--Geology, Structural)

KHIZHNYAKOV, A.V.

AUTHORS: Khizhnyakov, A. V., Chirkova-Zaleaskaya, Ye. F. 20-3-44/59

TITLE: On the Stratigraphy of Lower Devonian Deposits of the Podolsk **Cis-Dnestr** Region (K stratigrafii nizhnedevonskikh otlozheniy Podol'skogo Pridnestrov'ya)

PERIODICAL: Doklady AN SSSR, 1958, Vol. 118, Nr 3, pp. 560-572 (USSR)

ABSTRACT: The continental Lower Devonian deposits distinguish themselves markedly from the predominantly marine Devonian deposits at the south-western border of the Russkaya platforma(Russian Platform)owing to their terrigenous structure and their red colour. They are widely spread in the area mentioned in the title and form numerous lodes on the slopes of the banks of the Dniester river and its tributaries from the left side. The mass of these rocks is lithologically monotonous and is formed by the alternation of beds of limestones aleurite-containing loams as well as of argillites. The relative amounts of these components differ. In the lower part the loamy rocks predominate. The red sand-loam-deposits could be observed in bore holes to a distance of 100 km from the Dniester river. This mass

Card 1/4

20-3-44/59

On the Stratigraphy of Lower Devonian Deposits of the
Podolsk **Cis-Dnestr** Region

which is of a thickness of 400 m is stratified between deposits of the faunal character of Silurian time and of Middle Devonian time. Owing to its fish fauna, some ostracods, floral imprints and spores of some fossil plants it is counted to the Lower Devonian time. The fauna is distributed very irregularly in the cross section. It is richest in the lower part. For this reason the stratigraphic interrelations with the Silurian stratified below are much better explained than those with the superimposed strata. On the basis of its fish fauna the mentioned mass was divided into two stages: Zhedinskiy and Koblentskiy (Koblenz) (references 1, 3, 4). The boundary between Silurian and Lower Devonian can be drawn according to the disappearance of calcareous transition beds to a marine fauna and according to the occurrence in red sandy-loamy rock of numerous remains of armored fish (mainly **Pteraspidae,**, less Cephalaspidae, Coccosteidae and Asteraspidae). The characteristic fossils could successfully be separated from these groups (reference 4). The distribution of individual kinds in the transition strata is discussed in detail in the present work. The upper part

Card 2/4

On the Stratigraphy of Lower Devonian Deposits of the Podolsk **Cis-Dnestr** Region

20-3-44/59

nearly shows no paleontological remains and was counted conditionally to the upper layers of the Koblentskiy stage and to the Eyfel'skiy (Eifel) stage, because of numerous plant remains: Taeniocrada (reference 5). These early vascular plants form floral elements of old red sandstone from England. Some details of the Taeniocrada dubia Kr. et W. and T. (Haliserites) decheniana (Goeppert) are described here (figures 1 - 4). Both kinds are known in the Devonian as far as Povolzh'ye (Volga area), the Ural as well as Central Siberia and the South of Timan. Thus, the entire red mass of the so-called "Podol'skiy Old red" must be attributed to Lower Devonian time. Since in the bore holes north of the Dniester river every break in sedimentation between the Lower and the Middle Devon lacks, the authors agree with reference 2 that the dolomites of the lode at the Zolotaya Lipa village (Zota Lipa) belong to the Eifel stage. There are 4 figures and 5 references, 1 of which is Slavic.

ASSOCIATION: Petroleum Institute AN USSR (Institut nefti Akademii nauk SSSR)

Card 3/4

20-3-44/59

On the Stratigraphy of Lower Devonian Deposits of the Podolsk **Cis-Dnestr** Region

PRESENTED: May 9, 1957, by S. I. Mironov, Academician

SUBMITTED: May 9, 1957

AVAILABLE: Library of Congress

Card 4/4

KHIZHNYAKOV, A.V.

3(5) PHASE I BOOK EXPLOITATION SOV/2682

Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut

Voprosy poiskov, razvedki i dobychi nefti i gaza na territorii USSR; doklady na vyyezdnoy sessii uchenykh sovetov VNIGNI i VNII, prokhodivshey v g. L'vove v maye 1957 g. (Problems in the Exploration and Production of Oil and Gas in the Ukrainian SSR; Reports Presented at a Session of the Scientific Councils of the All-Union Petroleum Scientific Research Institute for Geological Survey and the All-Union Scientific Research Institute, in L'vov, May 1957) Moscow, Gostoptekhizdat, 1959. 282 p. 1,000 copies printed.

Additional Sponsoring Agency: USSR. Ministerstvo geologii i okhrany nedr.

Eds.: I. G. Baranov, V. V. Glushko, and A. S. Muromtsev; Executive Eds.: E. M. Tungans, and A. I. Zaretskaya; Tech Ed.: I. G. Fedotova.

PURPOSE: This book is intended for petroleum geologists and Ukrainian area specialists.

COVERAGE: This book contains 27 reports originally read at a meeting of the scientific councils of the VNIGNI (All-Union Petroleum Scientific Research Institute for Geological Survey), the VNII (All-Union Scientific Research Institute), the VNIIgaz, Ukrneft', Ukrgaz, Ukrvostokneftegazrazvedka, Ukrneftegazrazvedka, and Ukrneftegeofizika held in L'vov in May, 1957. The papers deal with the petroleum geology of the Dnepr-Donets depression, the Carpathians, Ciscarpathia, the southwestern fringe of the Russian Platform, and the northern Black Sea area. Particular attention is given to describing the geological features of those regions most likely to bear oil. Other articles discuss oil production techniques and ways of increasing drilling speed in deep wells. No personalities are mentioned. References accompany individual articles.

Laginin, N. A. Methods and Results of Geological Prospecting for Oil and Gas in the Western Regions of the UkrSSR (1945-1956) 33

Antipov, V. I. Geological Results of Geophysical Surveys in Predkarpat'ye (Ciscarpathia) and Within the Southwestern Rim of the Russian Platform 46

Dikenshteyn, G. Kh. The Tectonics and Gas and Oil Possibilities in the Western Part of the Russian Platform 59

Khizhnyakov, A. V. Basic Tectonic Features of the Volyn Podol'skoye End of the Russian Platform 69

Vysotskiy, I. V. Fundamentals of the Geological Structure and Oil-bearing Possibilities of the Southern Part of the Ciscarpathian Depression 74

Glushko, V. V. Basic Tectonic Features of the Ukrainian and Rumanian Carpathians and Ciscarpathia 95

Safarov, I. B. Differentiating the Productive Series of the Dolina Deposit 106

Shakin, V. A. Stratigraphic Differentiation and Correlation of the Oligocene Formation of the Eastern Carpathians 116

Khokhlov, P. S. Characteristic Features of the Geologic Structure of the Dnepr-Donets Depression and the Northern Fringes of the Donbass 121

Baranov, I. G., I. F. Klitochenko, A. A. Martynov, A. S. Muromtsev, and N. A. Samborskiy. Gas and Oil Possibilities of the Devonian Formations of the Southeastern Part of Dnepr-Donets Depression 138

Martynov, A. A., and N.A. Samborskiy, S.Ye. Cherpak. Oil and Gas Possibilities in the Devonian Formations of the Kolaydinskaya Area (Southwestern Edge of the Dnepr-Donets Depression) 150

KHIZHNYAKOV, A.V.

Devonian paleogeography in the southwestern Russian Platform. Trudy VNIGNI no. 10:169-180 '58. (MIRA 14:5)
(Russian Platform--Paleogeography)

BOBROVNIK, Daniil Prokhorovich[Bobrovnyk, D.P.]; BOLDYREVA, Tat'yana Aleksandrovna[Boldyrieva, T.O., deceased]; ISHCHENKO, Anton Markovich; STRUYEV, Mikhail Ivanovich; USIKOV, Ivan Dmitriyevich[Usykov, I.D.]; KHIZHNYAKOV, Andrey Vasil'yevich [Khyzhniakov, A.V.]; SHPAKOVA, Vera Borisovna; SHUL'GA, Pelageya Lukinichna [Shul'ha, P.L.], doktor geol.-miner. nauk; CHEKHOVICH, N.Ya.[Chekhovych, N.IA.], red.; MATVIYCHUK, O.O. [Matviichuk, O.O.], tekhn. red.

[Lvov-Volyn' Basin] L'vivs'ko-volyns'kyi kam'ianovuhol'nyi basin. [By] D.P.Bobrovnyk ta inshi. Kyiv, Vyd-vo Akad. nauk URSR, 1962. 143 p. (MIRA 16:3)

1. Institut geologicheskikh nauk Akademii nauk Ukr. SSR (for Shul'ga, Ishchenko). 2. Institut geologii goryuchikh iskopayemykh Akademii nauk Ukr. SSR (for Boldyreva). 3. L'vovskiy gosudarstvennyy universitet (for Bobrovnik). 4. Ukrainskiy nauchno-issledovatel'skiy gornorudnyy institut (for Khizhnyakov). 5. Trest "Ukrvuglegeologiya" (for Struyev, Shpakova, Usikov).

(L'vov--Volyn' Basin--Coal geology)

KHIZHNYAKOV, A.V.

Geological structure and prospects for finding gas and oil in the Lvov Paleozoic trough. Trudy UkrNIGRI no.5:189-202 '63. (MIRA 18:3)

GUREVICH, K.Ya.; ZAV'YALOVA, Ye.A.; POMYANOVSKAYA, G.M.; KHIZHNYAKOV, A.V.

Stratigraphy of the Carboniferous sediments of the Lvov Trough.
Trudy UkrNIGRI no.5:218-232 '63. (MIRA 18:3)

MUKHORTOV, Ya.N., kandidat sel'skokhozyaystvennykh nauk; KHIZHNYAKOV, F.G.;
CHIGIRINTSEVA, G.N.

Tillage of unfallowed fields. Zemledelie 4 no.6:45-48 Je '56.
(MLRA 9:8)

(Tillage)

NAUMOV, A.P.; KHIZHNYAKOV, I.P.

Heat radiation of Jupiter. Astron. zhur. 42 no.3:629-638 My-Je '65.
(MIRA 18:5)

1. Radiofizicheskiy institut Gor'kovskogo gosudarstvennogo universiteta.

KHIZHNYAKOV, Sergey Vasil'yevich; SKVORTSOV, Sergey Aleksandrovich,
red.; MATVEYEV, G.I., tekhn.red.; LARIONOV, G.Ye., tekhn.red.

[Practical calculations of heat insulation in industrial
apparatus and piping] Prakticheskie raschety teplovoi
izoliatsii promyshlennogo oborudovaniia i truboprovodov.
Moskva, Gos.energ.izd-vo, 1959. 125 p. (MIRA 12:9)
(Insulation (Heat))

Khizhnyakov, S.V.

KHIZHNYAKOV, Sergey Vasil'yevich; SKVORTSOV, Sergey Aleksandrovich,
[redacted], MATVEYEV, G.I., tekhn.red.; LARIONOV, G.Ye., tekhn.red.

[Practical calculations of heat insulation in industrial apparatus and piping] Prakticheskie raschety teplovoi izoliatsii promyshlennogo oborudovaniia i truboprovodov. Moskva, Gos.energ.izd-vo, 1959. 125 p. (MIRA 12:9)
(Insulation (Heat))

KHIZHNYAKOV, Sergey Vasil'yevich; SINEL'NIKOVA, L.N., red.

[Practical calculations for the heat insulation of industrial equipment and piping] Prakticheskie raschety teplovoi izoliatsii promyshlennogo oborudovaniia i truboprovodov. Izd.2., perer. Moskva, Izd-vo "Energiia," 1964. 143 p. (MIRA 17:6)

ACC NR: AP6022180 SOURCE CODE: UR/0023/66/000/001/0009/0015

AUTHOR: Tekhver, I. -- Tehver, I.; Khizhnyakov, V.

ORG: Institute of Physics and Astronomy, Academy of Sciences Estonian SSR (Institut fiziki astronomii Akademii nauk Estonskoy SSR)

TITLE: Raman scattering and luminescence in the secondary glow of an impurity center

SOURCE: AN EstSSR. Izv. Ser fiz-matem i tekhn n, no. 1, 1966, 9-15

TOPIC TAGS: Raman scattering, luminescence, impurity center, crystal impurity, spectral line, line width, light excitation, absorption band

ABSTRACT: This is a continuation of earlier work (Tr. in-ta fiz. i astron. AN ESSR, no. 29, 54, 1964 and no. 32, in press) where the possibility of using Raman scattering to investigate impurity centers in crystals was first investigated. The purpose of the present investigation is to separate the Raman-scattering and luminescence components of the secondary glow. It is assumed that the centers have a random distribution in the impurity crystal, and that the monochromatic light incident on the crystal has a frequency in the impurity absorption band. Calculation of the Raman scattering intensity reveals that the spectrum excited by the incident light contains a luminescence component with purely electronic line having a radiation width much smaller than the width of the vibrational excitation spectral lines. The luminescence

Card 1/2

ACC NR: AP6022180

can be separated only if the exciting light lies in the region of the phonon wing of the absorption band. The results are interpreted as a direct proof that the quantum yield of luminescence is constant and that the luminescence spectrum is independent of the excitation frequency within the limits of the impurity absorption bands. Detailed calculations are presented, by way of examples, for the spectrum of the secondary glow in the concrete cases of the single-oscillator model and in the case of a center with large Stokes losses. In the latter case it is concluded that the resonant Raman scattering can be used to advantage for the study of the impurity absorption centers. The authors thank K. K. Rebane for directing the work. Orig. art. has: 13 formulas.

SUB CODE: 20/ SUBM DATE: 19Oct65/ ORIG REF: 010

Card 2/2

KHIZHNYAKOV, V.I.

Heat exchange in a thin-walled tubular heater. Trudy LTIKHP 15:102-108 '58. (MIRA 13:4)

1. Predstavlena Kafedroy protsessov i apparatov Leningradskogo tekhnologicheskogo instituta kholodil'noy promyshlennosti.
(Heat exchangers) (Heat--Transmission)

KHIZHNYAKOV, V. V.

Tvorchestvo Mechnikova i literatura o nem /Mechnikov's work and literature on it/
Moskva, 1951, 190 p.

SO::Monthly List of Russian Accessions, Vol. 6 No. 10 January 1954.

MILENUSHKIN, Yu. [reviewer]; KHIZHNYAKOV, V.V.; VAYNDRAKH, G.M.; KHIZHNYAKOVA, N.V. [authors].

"Mechnikov's creative work and literature about him." V.V.Khizhniakov, G.M. Vaindrakh, N.V.Khizhniakova. Reviewed by IU.Milenushkin. Zhur.mikrobiol.epid. i immun. no.9:67-69 S '53. (MLRA 6:11)
(Mechnikov, Ilia Il'ich, 1845-1916) (Khizhniakov, Vasilii Vasil'evich, 1871-) (Vaindrakh, Grigorii Moiseevich) (Khizhniakova, N.V.)

KHIZHNYAKOV, V.V.; VAYNDRAKH, G.M.; KHIZHNYAKOVA, N.V. [authors]; MIREK, V.F., kandidat biologicheskikh nauk [reviewer].

"Mechnikov's creative work and literature about him; a bibliographic guide." V.V.Khizhniakov, G.M.Vaindrakh, N.V.Khizhniakova. Reviewed by V.F.Mirek. Sov.med. 17 no.10:47-48 O '53. (MLRA 6:10)

(Mechnikov, Il'ia Il'ich, 1845-1916) (Khizhniakov, Vasilii Vasil'evich 1871-) (Vaindrakh, Grigorii Moiseevich)

38137
S/058/62/000/004/007/160
A058/A101

24 4400

AUTHORS: Rebane, K. K., Sil'd, O. I., Khizhnyakov, V. V.

TITLE: Note concerning the description of transition probabilities by the moment method

PERIODICAL: Referativnyy zhurnal, Fizika, no. 4, 1962, 23, abstract 4A181 ("Tr. In-ta fiz. i astron. AN EstSSR", 1961, no. 13, 112 - 114)

TEXT: The authors consider the application of the moment method for describing the distribution of transition probabilities from initial state i to all other states f (including f = i) of a quantum-mechanical system. Two methods for averaging moment operator $\hat{S}_l$ (of order l) are considered. In the first method, averaging is effected on the basis of wave functions ψ_i of a fixed initial state of the system:

$$S_l^{(i)} = \int \psi_i^* \hat{S}_l \psi_i d\tau;$$

in the second method, instead of the wave function a density matrix figures:

$$S_l = \sum_i \omega_i \int \psi_i^* \hat{S}_l \psi_i d\tau = Sp[\hat{S}_l \hat{\rho}],$$

Card 1/2

S/058/62/000/004/007/160
A058/A101

Note concerning the...

where ω_i is the probability of finding the system in state i, and $\hat{\rho} = \exp(-\hat{H}/kT)\{Sp[\exp(\hat{H}/kT)]\}^{-1}$ is the density matrix (the case of thermal equilibrium). It is noted that incident to averaging by the first method it is possible to determine the distribution of transition probabilities without knowing the wave functions of finite states or the energy spectrum of the system, while incident to averaging by the second method it is not even necessary to know the initial wave functions; in virtue of the invariance of the matrix trace, the calculation can be carried out using any suitable system of orthonormalized functions.

[Abstracter's note: Complete translation]

Card 2/2

S/613/61/000/014/003/019
D207/D301

24.3500

AUTHORS: Rebane, K. K., Purga, A. P., Sil'd, O. I., and Khizhnyakov, V. V.

TITLE: On the theory of electronic-vibrational transitions in crystals and molecules. II. Results of calculations for different models

SOURCE: Akademiya nauk Estonskoy SSR. Institut fiziki i astronomii. Trudy. No. 14, 1961. Issledovaniya po lyuminestsentsii, 48-75

B

TEXT: The authors apply the results obtained in Part I /_Abstractor's note: See preceding article of this journal_/ to several theoretical models of vibrating systems, e.g. a luminescence center in a crystal or an isolated molecule. M. Lax's method-of-moment calculations (Ref. 1: J. Chem. Phys., 20, 1752, 1952) are used. The first four moments of an electronic vibrational band in the Condon approximation are found for the following: Single harmonic oscillator; a set of independent harmonic oscillators; a single anharmonic oscillator with anharmonicity of vibrations taken into account in

Card 1/3

the initial and final electronic states; a system of anharmonic oscillators with anharmonicity of the final electronic state taken into account. The Condon approximation restricts the results to the case when matrices of the electron transitions are independent of the vibrational coordinates. This restriction is removed in the latter part of the article and the authors consider (1) a single harmonic oscillator and (2) a set of independent harmonic oscillators. In case (1) the first four moments of an electronic-vibrational band are calculated with the electron matrix elements depending exponentially on the vibrational coordinate. In case (2) the first three moments of an electronic-vibrational band are calculated with the electron matrix element depending exponentially on the vibrational coordinate. Direct comparison of quantum-mechanical results for many-coordinate and quasimolecular (one or several effective coordinates) models of luminescence centers give the limits of applicability of the quasimolecular model. Acknowledgment is made to N. N. Kristofel' and I. V. Aberenkov for discussion of the results reported. There are 1 figure, 1 table and 39 references: 23 Soviet-bloc and 16 non-Soviet-bloc. The 4 most recent references to

S/613/61/000/014/003/019
On the theory of electronic-vibrational.D207/D301

the English-language publications read as follows: J. J. Markham, Rec. Mod. Phys., 31, 956 (1959); R. Knox, Phys. Rev., 115, 1095 (1959); M. Lax, Photoconductivity Conference (ed. by R. G. Breckenridge), New Yoek, 1956, p. 111; T. Kojima, J. Phys. Soc. Japan, 12, 908, 918 (1957).

✓B

SUBMITTED: July 16, 1960

Card 3/3

S/613/62/000/019/006/006
B108/B186

AUTHOR: Khizhnyakov, V. V.

TITLE: The Mössbauer effect with consideration of local vibrations

SOURCE: Akademiya nauk Estonskoy SSR. Institut fiziki i astronomii. Trudy. no. 19. 1962. Issledovaniya po teoreticheskoy fizike. 143-145

TEXT: The author has calculated the Mössbauer effect considering the second-order Doppler effect as well as crystal and local vibrations. In this paper it is pointed out that for the probability of the Mössbauer effect only those vibrations involving a photon-absorbing nucleus are essential. It is shown that the local vibrations can lead to an anisotropy of the Mössbauer effect. The displacement of the Mössbauer line with varying temperature is caused by both the crystal and the local vibrations.

SUBMITTED: November 29, 1961

Card 1/1

ACCESSION NR: AT3013092 S/2613/62/000/021/0276/0278

AUTHORS: Rebane, K. K.; Khizhnyakov, V. V.

TITLE: On the theory of the Shpolsky effect

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy*, no. 21, 1962, 276-278

TOPIC TAGS: Mossbauer, Shpolsky effect, electron oscillation, transition, spectra, recoil energy, Stokes loss

ABSTRACT: A brief comparison has been made between the Mössbauer and Shpolsky effect (sharp lines in electron-oscillation transition spectra of impure molecules). It is contended that many quantitative relationships in the Shpolsky effect can be obtained from the corresponding formulas in the Mössbauer theory if the γ-quanta recoil energy in the latter is replaced by the Stokes loss. Certain experiments are proposed to obtain information on the degree of interaction between oscillations of various electron types in the Shpolsky effect and the existence of the Mössbauer effect on heterogeneous atoms in organic crystals.

Card 1/2

ACCESSION NR: AT3013092

ASSOCIATION: AN EstSSR. Institut fiziki i astronomii (AN EstSSR. Institute of Physics and Astronomy)

SUBMITTED: 22Sep62 DATE ACQ: 11Sep63 ENCL: 00

SUB CODE: PH NO REF SOV: 006 OTHER: 001

Card 2/2

ACCESSION NR: AT3013093 S/2613/62/000/021/0278/0280

AUTHOR: Khizhnyakov, V. V.

TITLE: On detailed structure of electron-vibration bands

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy*, no. 21, 1962, 278-280

TOPIC TAGS: electron-vibration, band, electronic transition, phonon, line intensity

ABSTRACT: A theoretical investigation has been made on electron-vibration band structural details in the region of pure electronic transition lines at low temperatures ($KT \ll \hbar\bar{\omega}$). The Condon and harmonic approximations have been used for computation. The following simple relationship between phonon-less line intensity I_0 and maximum spectra I_{max} is established

$$I_0/I_{max} = (\hbar\bar{\omega}/\Gamma)\sqrt{2\pi P}\exp(-P).$$

if $P < 10$, and $\hbar\bar{\omega}/\Gamma > 10$, then $I_0/I_{max} \geqslant 0,01$.

Card 1/2

ACCESSION NR: AT3013093

where P - Stokes loss in absorption; Γ - half-width. "The author thanks K. K. Rebane for proposing the subject." Orig. art. has: 3 equations.

ASSOCIATION: AN EstSSR. Institut fiziki i astronomii (AN EstSSR. Institute of Physics and Astronomy)

SUBMITTED: 25June62	DATE ACQ: 11Sep63	ENCL: 00
SUB CODE: PH	NO REF SOV: 001	OTHER: 001

Card 2/2

REBANE, K. K. and KHIZHNYAKOV, V. V.

"Results from theoretical investigations of the Mössbauer effect."

The authors succeeded in discovering an analogy between Shpol'skiy's effect electron-vibrational transitions in impurity centers of ionic crystals, and the Mössbauer effect.

Report presented to the 11th Conference on Luminescence (Molecular luminescence and luminescence analysis) Minsk, 10-15 Sept. 1962.

REBANE, K. K.; TRIFONOV, Ye. D.; KHIZHNYAKOV, V. V.;

"Quasi-Linear Electron-Vibrational Spectra and their Relation to the Messbauer Effect."

report submitted to 11th Intl Spectroscopy Colloq, Belgrade, 30 Sep-4 Oct 63.

S/051/63/014/003/006/019
E039/E120

AUTHORS: Rebane, K.K., and Khizhnyakov, V.V.

TITLE: Theory of quasilinear electron-vibrational spectra in crystals. I. The theory of Shpol'skiy's effect

PERIODICAL: Optika i spektroskopiya, v.14, no.3, 1963, 362-370

TEXT: The theory of electron-vibration transitions is developed taking into account local fluctuations; in particular the effect of the Frank-Condon factor and the shape of lines with no background are investigated. It is shown that with the presence of local fluctuations in the electron-vibrational spectra in impurity centers of crystals together with bands and pure electron transition lines, dependent on crystal vibrations, there should appear a series of discrete vibration lines. This explains the Shpol'skiy effect: the occurrence of quasilinear spectra with impurity molecules in molecular crystals. Formulas are obtained showing the intensity and shape of the lines and their temperature dependence. The conditions required for the formation of quasi-linear spectra are found and the possibility of observing the intrinsic structure of quasilines is considered.

Card 1/2

Theory of quasilinear electron-...

S/051/63/014/003/006/019
E039/E120

For this the exciton zone must be sufficiently narrow or there must be a sufficiently severe selection rule imposed on the electron transitions.

SUBMITTED: October 15, 1962

Card 2/2

KHIZHNYAKOV, V.V.

AID Nr. 984-18 6 June

ANALOGY OF THE MÖSSBAUER AND THE SHPOLSKIY EFFECTS (USSR)

Rebane, K. K., and V. V. Khizhnyakov. Optika i spektroskopiya, v. 14, no. 4, Apr 1963, 491-494. S/051/63/014/004/007/026

A detailed comparison is presented of the thin gamma resonance lines in nuclear vibrational transitions, characteristic of the Mössbauer effect, and the thin lines of electron vibrational transitions, characteristic of the Shpolskiy effect. It is shown that by the use of the perturbation theory the two effects can be adequately described by the same formulas. This can be achieved because the mathematical properties of harmonically approximated wave functions fully eliminate the basic difference between the two treatments, which consists in postulating photon recoil energy in the Mössbauer effect and Stokes losses in the Shpolskiy effect. Along with the coincidence of such basic traits of the effects as the very thin spectral lines, the additive type of the spectrum, temperature dependence and the specific character of the influence of crystal vibrations, the analogy also encompasses the quantitative relationships of the theory. [ZL]

Card 1/1

KRISTOFEL', N.N.; REBANE, K.K.; SIL'D, O.I.; KHIZHNYAKOV, V.V.

Causes of the difference between the half-width of the absorption and emission bands of crystal phosphors. Opt. i spektr. 15 no.4:569-572 O '63. (MIRA 16:11)

KHIZHNYAKOV, V.V.

Polarizability of the nucleus, dispersion, and the reflection coefficient near the Mössbauer line. Fiz. tver. tela 6 no.2:640-641 F '64. (MIRA 17:2)

1. Institut fiziki i astronomii AN Estonskoy SSR, Tartu.

ACCESSION NR: AT4004328 S/2613/63/000/020/0067/0091

AUTHOR: Khizhnyakov, V. V.

TITLE: Mossbauer line contour taking local oscillations into account

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy*, no. 20, 1963. Issledovaniya po teoreticheskoy fizike, 67-91

TOPIC TAGS: Mossbauer effect, lattice oscillation, crystal lattice, line broadening, thermal effect, photon absorption, resonance absorption, molecular crystal, molecule oscillation

ABSTRACT: The Mossbauer effect is considered with crystal and local oscillations taken into account. The contour of the Mossbauer line has been related to the moments of the distribution of line intensities without taking into account the natural width of the excited level of the nuclei. The zero, the first, and the second central moments have been calculated. The contour of the Mossbauer line in several specific cases has been found. The results reveal the influence of the change in the state of the gamma-radioactive nuclei on the lattice vibrations and will apply at arbitrary temperatures. The following are among the effects caused by the influence of the local oscillations on the

Card 1/3

ACCESSION NR: AT4004328

shape of the Mossbauer line:

(a) broadening of the Mossbauer line as a function of temperature (if the change in the energy of the vibrational quanta of local oscillations is less, or of the same order as the natural width);

(b) high sensitivity of the shape of the line to temperature under certain conditions and splitting into a number of lines with natural widths, in certain cases;

(c) change of the temperature shift of the line maximum in comparison with a perfect crystal;

(d) change of the temperature decrease of intensity;

(e) additional anisotropy of the effect.

The following analysis was made as a basis for deriving the above conclusions:

(a) probability of resonance absorption of a photon by a nucleus in a crystal,

(b) introduction of normal coordinates,

(c) inspection of the Mossbauer line contour without an allowance for change in the energy of lattice oscillations,

(d) consideration of moments without allowance for natural width,

(e) influence of local oscillations on the intensity and spectral position of the line, and

ACCESSION NR: AT4004328

(f) analysis of the Mossbauer line contour with an allowance for change in the energy of lattice oscillations.

Orig. art. has: 53 formulas.

ASSOCIATION: Institut fiziki i astronomii AN EstSSR (Institute of Physics and Astronomy AN EstSSR)

SUBMITTED: 00 DATE ACQ: 14Jan64 ENCL: 00

SUB CODE: PH NO REF SOV: 022 OTHER: 019

Card 3/3

L 64710-65 EWT(1) IJP(c)

ACCESSION NR: AR5012267 UR/0058/65/000/003/D041/D042

SOURCE: Ref. zh. Fizika, Abs. 3D314

44,55 44,55 44,55 44,55 37 B

AUTHOR: Preem, R. A.; Purga, A. P.; Rabane, K. K.; Trifonov, Ye. D.; Khizhnyakov, V. V. 44,55

TITLE: Quasi-line electron vibrational spectra and their relationship to the Mössbauer effect

21, 44,55

CITED SOURCE: Tr. Komis. po spektroskopii. AN SSSR, vyp. 1, 1964, 38-51 44,55

TOPIC TAGS: Mossbauer effect, vibration spectrum, electron spectrum, line spectrum, crystal vibration, Raman scattering

TRANSLATION: A short survey is given of theory which considers quasi-line electron vibrational spectra (the Shpol'skiy effect, impurities in ionic crystals) and "nuclear vibrational" spectra (the Mössbauer effect and its analogies) from a single point of view. Particular attention is given to new results on the following problems: 1) effect of temperature on quasi-line spectra with regard to local oscillations, narrow vibrational zones and sharp maxima in the distribution of Stokes losses or output energy from crystal vibrations; 2) local and quasi-stationary vibra-

Card 1/2

L 64710-65

ACCESSION NR: AR5012257

0

tions around an impurity, quasi-line contour and nature of vibrational relaxation; 3) possibility for the existence of a second (broad) resonance near the phonon-free line; 4) quasi-line spectra of Raman scattering by local vibrations.

SUB CODE: SS ENCL: 00

LBL

Card 2/2

ACCESSION NR: AP4043031 S/0023/64/000/002/0087/0109

AUTHORS: Rebane, K. K.; Kristofel', N. N.; Trifonov, Ye. D.; Khizhnyakov, V. V.

TITLE: Dynamics of a lattice with impurities and quasi-line electron-vibration spectra of crystals

SOURCE: AN EstSSR. Izv. Seriya fiziko-matematicheskikh i tekhnicheskikh nauk, no. 2, 1964, 87-109

TOPIC TAGS: crystal lattice vibration, impurity spectrum, electron spectrum, line spectrum, crystal lattice theory, Mossbauer effect, Raman scattering

ABSTRACT: This survey article brings up to date an earlier report (N. N. Kristofel' and K. K. Rebane, Fizika shchelochno-galoidny*kh kristallov [Physics of Alkali-Halide Crystals] Riga, 1962, p. 32) in light of three major developments that have occurred during the

Card 1/3

ACCESSION NR: AP4043031

elapsed time. The first is the progress in the theory of crystal-lattice dynamics, particularly the character of distortion of the crystal lattice near impurities, which has made it possible to predict various types of oscillations in electron-vibration and related processes. The second is the application of the Mossbauer effect to the study of local lattice dynamics. The third is the better understanding of the closed connection between the interaction with electron-transition vibrations and the analogous problem of gamma transitions in an atomic nucleus contained in the crystal (optical analog of the Mossbauer line and the Shpol'skiy effect). In addition, the number of experimental researches on the direct study of dynamics of the lattice near crystal defects, including local oscillations, has greatly increased during the past few years. It is pointed out in the conclusions that principal interest attaches to further development of the theory of the purely electronic line and performance of exact experiments aimed at ascertaining how narrow they can be and how close the analogy between the Mossbauer line

ACCESSION NR: AP4043031

and the purely electronic line actually is. Further development of the theory of vibrations of impurity molecules in crystals and further research with the aid of the Mossbauer effect are urged. The section headings are: 1. Introduction. 2. Local and pseudolocal oscillations. 3. Electron-vibration transitions and local lattice dynamics. 4. Raman scattering of light. 5. Infrared absorption spectra. 6. Mossbauer effect and a few other phenomena. 7. Concluding remarks. Orig. art. has: 2 figures, 2 formulas, and 1 table.

ASSOCIATION: None

SUBMITTED: 12Mar64 ENCL: 00

SUB CODE: OP, SS NR REF SOV: 066 OTHER: 068

Card 3/3

L 59211-65 EWT(1)/T/EEC(b)-2 Pi-4 IJP(c) GG

ACCESSION NR: AR5017538

UR/0058/65/000/006/D040/D040

20

SOURCE: Ref. zh. Fizika, Abs. 6D295

B

AUTHORS: Rebane, K. K.; Tehver, I. Yu.; Khizhnyakov, V. V.

TITLE: Detailed structure of the purely electronic quasi-line

CITED SOURCE: Tr. In-ta fiz. i astron. AN EstSSR, no. 27, 1964, 17-22

TOPIC TAGS: purely electronic quasiline, line structure, electron vibrational spectrum, impurity center, quantum beat procedure

TRANSLATION: The authors consider the structure of the purely-electronic quasi-line (PEL) in electron-vibrational spectra of impurity crystals in two cases: 1) the impurity centers (IC) are in ideally identical conditions (theoretical spectrum); 2) the IC are in slightly different conditions as a result of inhomogeneity of the crystal matrix (the spectrum corresponds to conditions of the existing experiment). It is indicated that at low temperatures the PEL can have a width on the order of the radiation width ($\sim 10^{-4}$ cm^{-1}). It is proposed to investigate the form of the PEL using the quantum beat procedure (RZhFiz, 1964, 4D157), which eliminates the influence of the inhomogeneities of the crystal on the purely-electronic energy of the impurities.

SUB CODE: OP ENCL: 00

Card 1/1 lm

ACCESSION NR: AP4013537 S/0181/64/006/002/0640/0641

AUTHOR: Khizhnyakov, V. V.

TITLE: Nuclear polarizability, dispersion, and coefficient of reflection near the Mossbauer line

SOURCE: Fizika tverdogo tela, v. 6, no. 2, 1964, 640-641

TOPIC TAGS: nuclear polarizability, Mossbauer effect, nuclear refraction, reflection, gamma quantum, electron polarizability, phonon transition

ABSTRACT: Nuclear polarization near the Mossbauer line is of considerable significance because it is responsible for the exceptional intensity of the line. The author finds an expression for the total electrical and magnetic nuclear polarizability, neglecting the insubstantial effect of phonon transition. From this relationship it follows that for many gamma transitions (at which the Mossbauer effect has already been observed) nuclear polarizability in the region of the Mossbauer line is greater than or equal to electron polarizability. The effect of the nuclear refractive index, or rather, the change in index on nuclear polarizability near the Mossbauer line is determined. When the maximal value of

Card 1/2

ACCESSION NR: AP4013537

the nuclear-refraction correction (change) is about equal to or is greater than the electron-refraction correction, varying with the relative velocity of the source and the absorbing medium, a considerable change may occur in both the coefficient of absorption and the actual refractive index and, consequently, also in the coefficient of reflection for gamma quanta. This permits the observation of Mossbauer resonance by reflection from the material, rather than on passage of gamma quanta through the medium. The advantage of a much weaker parasitic background of secondary gamma quanta is thus obtained. Orig. art. has: 3 formulas.

ASSOCIATION: Institut fiziki i astronomii AN ESSR, Tartu (Institute of Physics and Astronomy, AN ESSR)

SUBMITTED: 06May63 DATE ACQ: 03Mar64 ENCL: 00

SUB CODE: OP, SS NO REF SOV: 005 OTHER: 003

Card 2/2

REBANE, K.K.; KRISTOFEL', N.N. [Kristoffel, N.]; TRIFONOV, Ye.D.;
KHIZHNYAKOV, V.V.

Dynamics of a lattice with impurities and the quasi-line electron-vibration spectra of crystals. Izv. AN Est. SSR. Ser. fiz.-mat. i tekh. nauk 13 no.2:87-109 '64.
(MIRA 17:9)

1. Corresponding Member of the Academy of Sciences of the Estonian S.S.R. (for Rebane).

L 6321-66 EPA(s)-2/EWT(m)/EWP(t)/EWP(b) IJP(c) JD/JG
ACCESSION NR: AP5019853
UR/0181/65/007/008/2444/2449

AUTHOR: Zavt, G. S.; Kristofel', N. N.; Khizhnyakov, V. V.

56
54

TITLE: Contribution to the theory of the width of infrared U-center absorption bands

B

SOURCE: Fizika tverdogo tela, v. 7, no. 8, 1965, 2444-2449

H

TOPIC TAGS: potassium chloride, potassium bromide, activated crystal, line width, IR spectrum, absorption line, crystal defect, impurity center, crystal vibration, phonon interaction

ABSTRACT: The purpose of the article was to explain why recent experimental measurements of the line width in systems KCl-H, D and KBr-H, D (D. N. Mirlin and I. I. Reshina, FTT v. 5, 3352, 1963; v. 6, 945 and 3078, 1964) have led to results that did not agree with previous theoretical explanations, namely that the width of the infrared bands of U-center absorption increases more rapidly with temperature than follows from any acceptable decay scheme. The authors therefore conclude that the dominating contribution to the line width, at least at high temperatures, is made by processes of higher orders, namely 4-phonon processes for D centers and 5-phonon processes for H-centers. They prove this point of view by analyzing a formula for the line width, which they derive in the following approximations: It

Card 1/2

0902 [illegible]

L 6321-66
ACCESSION NR: AP5019863

2

is assumed that the defect differs from the substituted ion in mass only. Inasmuch as the impurity level is well localized, it is assumed that the defect participates only in the local vibrations, and the crystalline vibrations at atoms neighboring on the defect are not perturbed. This means that in the case of D-centers it is necessary to take into account processes in which two and three phonons are produced, and in the case of H-centers--three and four phonons. The anharmonic interactions of 3rd, 4th, and 5th orders are analyzed in the usual manner using the two-time Green's functions. The theoretical curve revised in this manner is in good agreement with the experimental data. "The authors thank D. N. Mirlin for useful discussions." Orig. art. has: 1 figure, 9 formulas, and 1 table.

ASSOCIATION: Institut fiziki i astronomii AN ESSR, Tartu (Institute of Physics and Astronomy AN ESSR)

SUBMITTED: 14Jan65	ENCL: 00	SUB CODE: SS, OP
NR REF SOV: 007	OTHER: 013	

BVK
Card 2/2

7

L 3536-66 EWT(1) IJP(c)

ACCESSION NR: AP5015745 UR/0023/65/000/001/0094/0106

41
35
B

AUTHOR: Hiznjakov, V. (Khizhnyakov, V.) 44,55

TITLE: Theory of quasi-line electron-vibrational spectra and of the Mossbauer effect with account of anharmonicity of the oscillations 21,44,55

SOURCE: AN EstSSR. Izvestiya. Seriya fiziko-matematicheskikh i tekhnicheskikh nauk, no. 1, 1965, 94-106

TOPIC TAGS: Mossbauer effect, line width, vibration spectrum, electron spectrum

ABSTRACT: The author analyzes the influence of anharmonicity of oscillations on the Mossbauer effect and on the electron-vibrational spectra in impure crystals. Both crystalline and local vibrations are taken into account. The calculations are carried out in the second approximation of the third-order anharmonicity operator, and in the first approximation of the fourth-order anharmonicity operator. Special attention is paid to the position, width, and structure of the quasi-lines. The anharmonic corrections to the transition

Card 1/2

L 3536-66

ACCESSION NR: AP5015745

6

probabilities are disregarded. It is shown that the analogy between the electron-vibrational transitions and the Mossbauer effect holds true if the anharmonicity of the vibrations is taken into account but the anharmonicity effect in the transition probabilities is neglected. It is also found that the anharmonic decay of the local oscillators causes an appreciable change in the formula for the phononless line intensity. Formulas are derived for influence of the anharmonicity on the positions and widths of lines occurring upon creation and destruction of local phonons. The one-phonon quasi-linear anharmonic splitting is also considered. 'I thank K. K. Rebane for directing this work.' Orig. art. has: 37 formulas 44,55

ASSOCIATION: Institut fiziki i astronomii AN ESSR (Institute of Physics and Astronomy, AN ESSR) 44,55

SUBMITTED: 09May64 ENCL: 00 SUB CODE: OP, SS

NR REF SOV: 009 OTHER: 008

Card 2/2

L 23517-66 EWT(1)/T IJP(c) GG

ACC NR: AT6008329 SOURCE CODE: UR/2613/64/000/027/0003/0016

AUTHOR: Rebane, K. K.; Trifonov, Ye. D.; Khizhnyakov, V. V.

49
48
B+1

ORG: none

TITLE: Quasi-line vibrational electron spectra and their relationship to the Mössbauer effect

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy, no. 27, 1964. Issledovaniya po teorii tverdogo tela (Research on the theory of solids), 3-16

TOPIC TAGS: line spectrum, vibration spectrum, Mossbauer effect, crystal theory, cadmium sulfide, crystal impurity, electron spectrum, temperature dependence

21,44,55

ABSTRACT: The authors briefly review the literature on the theory of quasi-line vibrational electron spectra in impurity crystals. Fundamental formulas are given which describe vibrational electron spectra and their relationship to temperature. The theoretical conclusions are compared with experimental data for the 488.6 angstrom line in a cadmium sulfide crystal. Experimental curves for the temperature relationship of the CdS emission spectrum near this line show qualitative confirmation of the theoretical conclusions. The ratio of the integral intensity of the pure electron line to that of the phonon section of the curve (due here to acoustic vibrations of the lattice) falls rapidly with an increase in temperature. The distribution of Stokes

Card 1/2

L 23517-66

ACC NR: AT6008329

1

losses shows a maximum at approximately 6 cm^{-1}, i. e. the strongest interaction is with vibrations having a wavelength of 10-20 lattice constants. A great similarity is observed between the Mössbauer effect and quasi-line vibrational electron spectra. The main difference between the two phenomena is that recoil energy is of prime importance in the Mössbauer effect while Stokes losses play the leading role in quasi-line vibrational electron spectra. The second approximation of perturbation theory is sometimes required for explaining the Mössbauer effect with respect to the natural width of the excited level. Orig. art. has: 2 figures, 1 table, 6 formulas.

SUB CODE: 20/ SUBM DATE: 01Nov63/ ORIG REF: 029/ OTH REF: 010

Card 2/2 10

L 23516-66 EWT(1)/T IJP(c) GG

ACC NR: AT6008330

SOURCE CODE: UR/2613/64/000/027/0017/0022

AUTHOR: Rebane, K. K.; Tekhver, I. Yu.; Khizhnyakov, V. V.

ORG: none

43

B+1

TITLE: Detailed structure of a purely electronic quasi-line

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy, no. 27, 1964. Issledovaniya po teorii tverdogo tela (Research on the theory of solids), 17-22

TOPIC TAGS: crystal theory, impurity center, Mossbauer effect, line spectrum, line width, vibration spectrum, crystal impurity

21,44155

ABSTRACT: The authors study the theoretical width of an extremely narrow purely electronic quasi-line in vibrational electron spectra of impurity crystals. Two cases are considered: 1. the impurity centers are assumed to be ideally identical, 2. the impurities are assumed to be in slightly different conditions due to nonuniformity in the structure of the crystal matrix. The second case corresponds to actual experimental conditions. The theoretical similarities between the purely electronic quasi-line and the Mössbauer line are discussed. It is shown that the purely electronic line in the vibronic spectrum of an impurity crystal may have a width of the order of the radiation width, at least at low temperatures, i. e. of the order of 10^{-4} cm^{-1} for allowed transitions. This line is narrow enough to be lost through statistical dispersion due to nonhomogeneities in the crystal matrix in ordinary experimental condi-

Card 1/2

2

L 23516-66

ACC NR: AT6008330

tions. An experimental study of the shape of these lines will require improvement in experimental techniques to eliminate the effect of nonhomogeneities in the crystal on the purely electronic energy of impurities. Orig. art. has: 1 formula.

SUB CODE: 20/ SUBM DATE: 20Nov63/ ORIG REF: 011/ OTH REF: 003

Card 2/2 90

L 25688-66 EWT(1) IJP(c) AT

ACC NR: AR6005215 SOURCE CODE: UR/0058/65/000/009/E032/E032

AUTHOR: Fedoseyev, V. G.; Khizhnyakov, V. V. 32

TITLE: Contribution to the theory of the optical analog of the Mossbauer line B

SOURCE: Ref. zh. Fizika, Abs. 9E279

REF SOURCE: Tr. In-ta fiz. i astron. AN EstSSR, no. 29, 1964, 90-94

TOPIC TAGS: Mossbauer effect, matrix element, oscillation, electron spectrum, line width, line broadening

21

TRANSLATION: The authors considered the quasi-linear electron-vibrational spectra with allowance for the anharmonicity of the oscillations and for the deviation from the Condon approximation. It is shown that the purely electronic line in this model has a natural width. As in the Condon approximation, the main influence of the anharmonicity of the oscillations consists in an essential change in the formula for the intensity of the purely electronic lines compared with the formula in the harmonic approximation, and also in the final broadening of all the quasilines in the vibrational wings of the purely electronic line.

SUB CODE: 20

Card 1/1

TRISHEVSKIY, I.S.; KHIZHNYAKOV, Ya.V.; PROKOPOVA, G.I.

Corrugated cold-bent steel. Standartizatsiia 28 no.7:55-56 Jl '64. (MIRA 17:11)

KHIZHNYAKOVA, I. N.

Development of [illegible]